

Appl. No. 10/652,007
Amendment dated May 20, 2005
Reply to Office Action of February 23, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-36 (Cancelled)

37. (Currently amended) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 50 claim 36 wherein said characteristic is the presence of at least one C-C bond, and at least one of the carbon atoms participating in said C-C bond is also bonded to at least one fluorine atom.

38. (Cancelled)

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39. (Original) A low dielectric constant fluorine and carbon-doped silicon oxide dielectric material for use in an integrated circuit structure comprising the reaction product of an oxidizing agent and one or more silanes comprising one or more organofluoro silanes having the formula $\text{SiR}_1\text{R}_2\text{R}_3\text{R}_4$, wherein:

- (a) R_1 is selected from the group consisting of H, a 3 to 5 carbon organo moiety, and an oxyorganomo moiety;
- (b) R_2 is an organofluoro moiety; and
- (c) R_3 and R_4 are independently selected from the group consisting of the same or different leaving group, the same or different organofluoro moiety, and the same or different $((\text{L})\text{Si}(\text{R}_5)(\text{R}_6))_n(\text{R}_7)$; wherein n ranges from 1 to 5; L is O or $(\text{C}(\text{R}_8)_2)_m$; m ranges from 1 to 4; each of the n R_5 's and n R_6 's is independently selected from the group consisting of the same or different leaving group and the same or different organofluoro moiety; R_7 is selected from the group consisting of a leaving group and an organofluoro moiety; and each of the $2n^*m$ or fewer R_8 's is selected from the group consisting of F and the same or different organofluoro moiety.

40. (Cancelled)

41. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said oxidizing agent comprises hydrogen peroxide.

42. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said R_1 comprises hydrogen.

43. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said R_2 comprises an organofluoro moiety containing CF_3 .

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44. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said R_2 consists essentially of C and F atoms.

45. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said R_2 consists essentially of C and F atoms alone.

46. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said R_2 comprises consists essentially of C and F atoms and R_3 consists essentially of an alkyl.

47. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said R_3 contains CH_3 moieties.

48. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said R_4 comprises a leaving group.

49. (Previously presented) The low dielectric constant fluorine and carbon-doped silicon oxide dielectric material of claim 39 wherein said R_4 comprises hydrogen.

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50. (New) A low dielectric constant fluorine and carbon-doped silicon oxide dielectric material for use in an integrated circuit structure and further characterized by:

- (a) each silicon atom is bonded to at least 1 oxygen atom ;
- (b) silicon atoms bonded to carbon atoms;
- (c) at least 1 carbon atom bonded to 1 to 2 fluorine atoms; and
- (d) the presence of at least 1 C-C bond.

51. (New) A low dielectric constant fluorine and carbon-doped silicon oxide dielectric material for use in an integrated circuit structure wherein all silicon atoms are bonded to at least 1 oxygen atom.